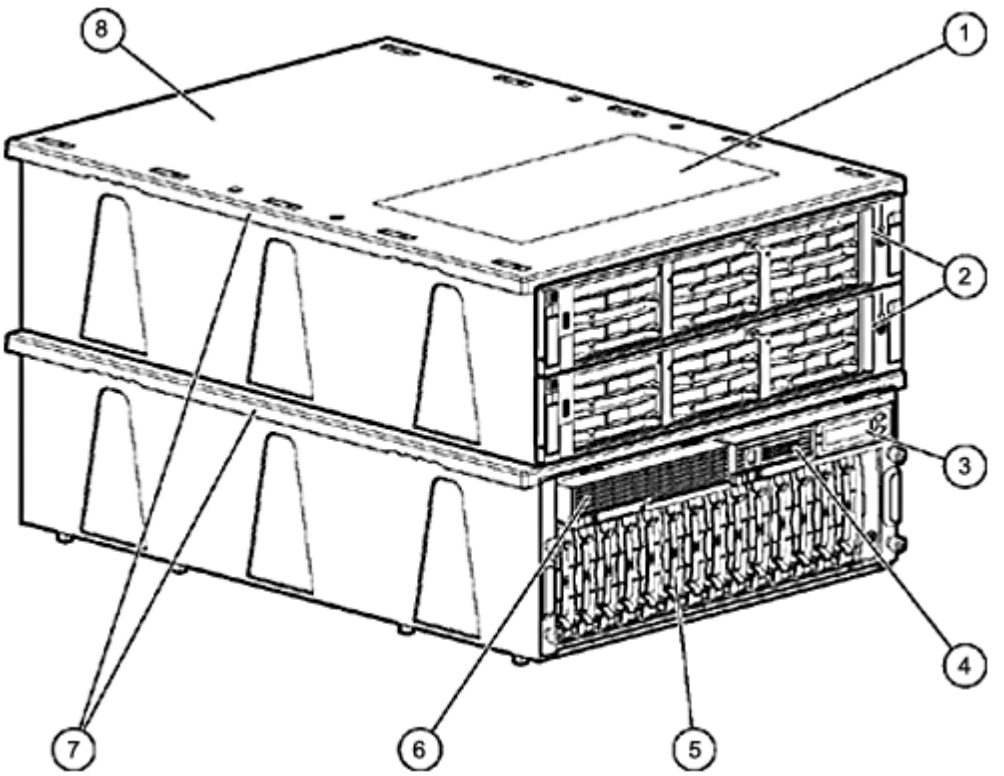
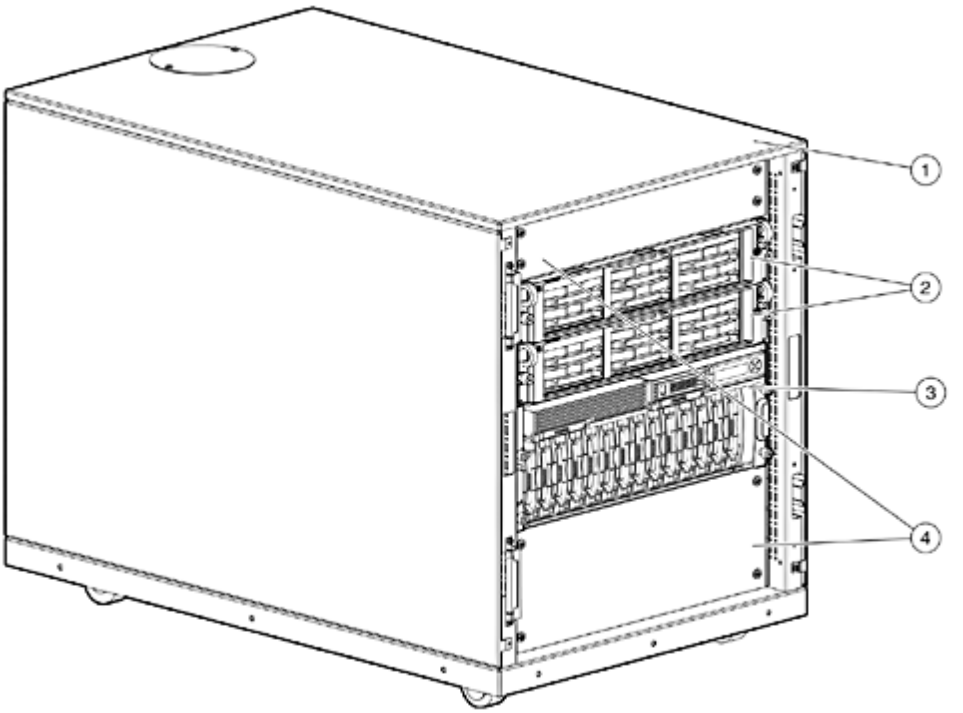
Overview



1. Cluster Component Label
2. Two 2U Servers
3. MSA500G2 Controller
4. MSA500G2 Controller LED
5. 4U Shared Storage with 14 1" Hot Plug Hard drives Bays
6. Redundant MSA500G2 Controller Bay
7. Lifting Rails
8. Configuration Fixture

HP ProLiant DL380 Generation 4 (G4) Packaged Cluster with MSA500 G2 - Racked

Overview



1. 14U rack
2. Two 2U Servers
3. 4U Shared Storage with 14 1" Hot Plug Drives Bays
4. Open rack space for options (6U total)

What's New

- Features two HP ProLiant DL380 G4 servers with 3.6 GHz-2MB cache/800 MHz FSB
- Redundant Fans Standard in servers
- High Availability Kit Optional (includes MSA500 G2 controller, 4-Port Shared storage module, Smart Array Multipath Software and 2 Smart Array 642 controllers)
- Configure-To-Order (CTO) capability is offered by HP inside sales

Overview

At A Glance

- Two HP ProLiant DL380 G4 Servers (1 processor per server) plus the Modular Smart Array 500 G2 storage system combined in an 8U configuration fixture or an HP 14U rack
- Supports Ultra320 RAID controller with 256-MB battery-backed cache, upgrade to 512-MB cache
- End-to-end Ultra320 SCSI technology
- Increase standard battery-backed cache to 256MB on the MSA500 G2 controller
- Rapid Drive Rebuild technology in MSA500 G2 for 5X increase in disk drive rebuilds Modular Smart Array 500 G2
- Up to 4-Node high availability clustering for Linux and NetWare. Up to 2-Node high availability clustering for Windows Server 2003, enterprise edition

HP ProLiant DL380 G4 (per server) features:

- Integrated Lights-Out (iLO) Management standard on system board
- Intel Xeon 3.4 GHz or 3.6 GHz processors with 64-bit extensions, a 800MHz Front Side Bus and 1 MB or 2MB of L2 cache
- Intel E7520 Chipset
- Integrated Ultra320 Smart Array 6i Plus Controller with 64MB RAM and optional 128MB Battery-Backed Write Cache (BBWC) Enabler option kit
- Three available 64-bit PCI-X slots, including two non-hot pluggable 100MHz slots and one non-hot-pluggable 133MHz slot and optional PCI-X Hot-Plug cage and Optional PCI-E Non-hot plug Cage (2) x 4
- NC7782 Dual Port PCI-X 1000T Gigabit Server Adapter (embedded)
- Support for up to six 1" Wide Ultra3/Ultra320 SCSI hot plug hard drives or for five hot plug hard drives and one DAT hot plug tape drive
- Optional dual channel drive backplane
- Internal hot plug capacity 1.80 TB standard (6 x 300 GB 1" HD)
- 575-Watt Hot Plug Power Supply (with optional redundancy)
- Redundant Hot Pluggable Fans standard
- Quick Deploy Rail System includes sliding universal rails and an ambidextrous cable management arm for easy serviceability and in-rack tool-less access to major components
- USB 2.0 support one port up front and two port in back
- Automatic Server Recovery (ASR), ROM Based Setup Utility (RBSU), HP System Insight Manager, Status LEDs including system health and UID and SmartStart

Modular Smart Array 500 G2 features:

- Total storage capacity of 4.20 TB (14 HP Universal disk drives of 300 GB)
- Up to 4-Node high availability clustering for Linux and NetWare. Optional 4-port module or HA kit required.
- Up to 2-Node high availability clustering for Windows Server 2003, enterprise edition
- Shared storage for up to 4 ProLiant servers
- Boot from storage - move all disks to external storage for best capacity utilization
- Redundant capable Smart Array Controllers
- Multipath connectivity option with load balancing
- Redundant power supplies and fans standard
- Convertible to HP StorageWorks Modular Smart Array 1000
- 3 year warranty with next day on site service
- Pre-failure warranty that covers disk drives
- Protected by HP Services and a worldwide network of resellers and service providers. Three-year Next Business Day, on-site limited global warranty. Certain restrictions and exclusions apply. Pre-Failure Notification on processors, memory, and SCSI hard drives.

Standard Features (DL380 Generation 4 Packaged Cluster with MSA500 G2)

Packaging	8U Configuration Fixture - Recyclable ABS
	Unique cabling with positive identification (secured to storage configuration fixture)
	Two 6 foot SCSI cables
	One 6 foot Ethernet cross over cables
	Shock resistant pallet

Standard Features (DL380 Generation 4 Packaged Cluster with MSA500 G2 - Racked)

Packaging	HP Rack S10614 Shock Pallet (14U) - carbon, metallic graphite Shock resistant pallet Servers & Storage are rack installed Fully pre-wired and Factory Integrated Two 6 foot SCSI cables

Standard Features (DL380 Generation 4 Packaged Cluster with MSA500 G2 (common features with or without rack models)

Server	HP ProLiant DL380 G4 Server (Qty 2) NOTE: Complete information on the server can be found in the following QuickSpecs: http://h18004.www1.hp.com/products/servers/proliantdl380/index.html.
Shared Storage	Modular Smart Array 500 G2 (Qty 1) NOTE: Complete information on the storage can be found in the following QuickSpecs: http://h18004.www1.hp.com/products/servers/proliantstorage/sharedstorage/sacluster/index.html.
Documentation	Cluster set-up poster and configuration guide
Software Components	The Packaged Cluster utilizes a single, consistent set of utility software for storage and RAID management, setup, configuration and troubleshooting. This consistency reduces the cost of ownership by reducing the training and technical expertise necessary to install and maintain your HP server storage solution.

Configuration

- Array Configuration Utility (ACU) (On-line/off-line)
- Option ROM Configuration for Arrays (ORCA)
- Selective Storage Present (SSP)
- Rom based set-up utility (RBSU)

Management/Health

- HP Systems Insight Manager
- SmartStart
- Management Agents
- Redundant ROM
- Remote Flash ROM
- Integrated Lights-Out Support
- Remote Insight Lights-Out Edition
- Automatic Server Recovery (ASR)
- Active Update
- ROMPaq, support software and configuration utilities
- Survey Utility and diagnostics utilities
- Drive Parameter Tracking
- Dynamic Sector Repairing
- Hot Spare Boot
  NOTE: Upon the event of a failed processor or VRM in a multi-processing environment, the system will automatically reboot and use the remaining good processor(s).
- Pre-Failure Notification (covers processors, SCSI hard drives and memory)

Standard Features (DL380 Generation 4 Packaged Cluster with MSA500 G2 (common features with or without rack models)

ProLiant Essentials Foundation Pack Software	HP Systems Insight Manger	HP's new HP Systems Insight Manager (HP SIM) helps maximize system uptime and performance and reduce system maintenance costs by providing proactive notification of problems before those problems result in unplanned downtime or reduced productivity. HP SIM are both easy to set up work with the Insight Management Agents, integrated Lights-Out and Remote Insight Lights-Out Edition, and Version Control Agents to deliver robust fault, configuration, and asset management as well as remote administration. With HP SIM customers will also be able to take advantage of role-based security; the ability to manage ProLiant, Integrity, and HP 9000 systems; and plug-ins for storage, client, printer, and power management as well as server rapid deployment, performance management, and workload management. For more details on HP SIM visit http://www.hp.com/go/hpsim.
	SmartStart	SmartStart is a tool that simplifies server setup, providing a rapid way to deploy reliable and consistent server configurations. For more information, please visit the SmartStart Web site at http://www.hp.com/servers/smartstart. SmartStart version supported (minimum): SmartStart 7.10.
	Management Agents	The Management Agents form the foundation for HP's Intelligent Manageability strategy. They provide direct, browser-based access to in-depth instrumentation built into HP servers, workstations, desktops, and portables, and send alerts to HP System Insight Manager and other enterprise management applications in case of subsystem or environmental failures. For additional information about the Management Agents and other management products from HP, please visit the management Web site at http://www.hp.com/servers/manage.
	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides automatic delivery of software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
	ROMPaq, support software, and configuration utilities	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options available in SmartStart or downloadable from Software and Drivers download pages, at http://www.hp.com/go/support.
	Survey Utility and diagnostics utilities	The most advanced configuration analysis, reporting and troubleshooting utilities used by HP and at your fingertips, available in SmartStart.

Standard Features (DL380 Generation 4 Packaged Cluster with MSA500 G2 (common features with or without rack models)

Optional ProLiant Essentials Value Packs

Optional software offerings that selectively extend the functionality of an Adaptive Infrastructure to address specific business problems and needs:

- Rapid Deployment Pack – an automated solution for multi-server deployment and provisioning, enabling companies to quickly and easily adapt to changing business demands.
- Workload Management Pack – provides easier management of complex environments, improving overall server utilization and enabling Windows 2000 customers for the first time to confidently deploy multiple applications on a single multiprocessor ProLiant server.
- Integrated Lights-Out Advanced Pack – upgrades the Integrated Lights-Out processor to full virtual presence and control with graphical console and virtual media
- Intelligent Networking Pack - detects and analyzes network bottlenecks or broken network linkages and steers traffic to the optimum route based on network conditions, plus it provides an extra layer of protection. The virus throttle feature of the solution slows the propagation of fast spreading virus.
- Vulnerability and Patch Management Pack - identifies and remediates software security vulnerabilities due to missing patches as well operating system configurations that can be exploited by viruses, worms, and other blended threats
- Virtual Machine Management Pack - provides central management and control of virtual machines from Microsoft and VMware. Integrated approach provides the ability to manage both physical and virtual resources from a single management console.

NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.

OS Support

Microsoft Cluster Service

- Microsoft Windows Server 2003 Enterprise Edition
- Microsoft Windows 2000 Advanced Server

Novell Cluster Service

- Novell NetWare

HP Service Guard Cluster Service for Linux

- Red Hat Enterprise Linux
- UnitedLinux
- SuSE Linux Enterprise Server

SteelEye's LifeKeeper for Linux

- Red Hat Enterprise Linux
- UnitedLinux
- SUSE Linux Enterprise Server

NOTE: For more complete and up-to-date information on how to buy server operating systems from HP please visit the OS product site at: http://h18004.www1.hp.com/products/servers/software/OEM.html
NOTE: For a more complete and up-to-date listing of supported OSs and versions, please visit our OS Support Matrix at: http://www.hp.com/go/supportos.

NOTE: Please refer to compatibility matrix http://www.hp.com/products/sharedstorage for latest compatibility information.
NOTE: For a more complete and up-to-date information on Linux support, please visit HP Linux Web site at http://h18000.www1.hp.com/products/servers/linux/hpLinuxcert.html.

Standard Features (DL380 Generation 4 Packaged Cluster with MSA500 G2 (common features with or without rack models)

Service and Support

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of resellers and service providers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Additional support may be covered under the warranty or available for an additional fee. Enhancements to warranty services are available through HP Care Pack services or customized service agreements.

NOTE: Limited warranty includes 3 year parts, 3 year labor, 3-year on-site support.

Care Pack services provide a range of life cycle support options that let you choose the service levels that meet your business requirements, from basic to mission-critical.

A full range of HP Care Pack hardware and software services are available including:

- Installation and start up
- Education courses
- Extended onsite hardware coverage hours from same business day 13 hours, 5 day to 24 hours, 7 days call window with options including 4-hour response or 6-hour Call To Repair
- Comprehensive range of software technical support for Microsoft, Linux, ProLiant Essentials and VMWare-based IT solutions helping to deliver high level of application availability. Response times range from 30 mins for critical problems to 2 hours.
- System Management, Performance Services and Mission Critical Support Solution

HP Care Pack services include coverage for the HP branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as 22" and smaller external monitors and tower UPS options up to 3kVA; these items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included, standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

NOTE: For more information on HP Care Pack services, contact any of our worldwide sales offices or resellers or visit our worldwide Web site on the internet at: http://www.hp.com/hps/carepack

NOTE: For more complete information on HP Services offerings, customers and resellers, please visit us at: http://www.hp.com/hps

NOTE: Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features (HP ProLiant DL380 G4 server)

Processor (per server)	Intel Xeon Processor 3.6 GHz
Cache Memory (per processor)	2MB second-level ECC cache (full speed)
Upgradeability (per server)	Upgradeable to dual processing
Chipset (per server)	Intel E7520 Chipset NOTE: For more information regarding Intel chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.
Memory Protection	Online spare Advanced ECC
Memory (per server)	Type: PC2-3200 400MHz DDR-II SDRAM Standard: 1 GB Maximum: 12 GB
Network Controller (per server)	NC7782 Dual Port PCI-X 1000T Gigabit Server Adapter (embedded)

PCI-X Non Hot-Plug Riser

Expansion Slots	Slot Number	Bus Speed	Bus Number*	Device Number**	Hot Plug	PCI Voltage	NOTES
	1	64-bit/133MHz PCI-X	10	1	no	3.3 Volt	Universal cards are supported
	2	64-bit/100MHz PCI-X	6	1	no	3.3 Volt	Universal cards are supported
	3	64-bit/100MHz PCI-X	6	2	no	3.3 Volt	Universal cards are supported

*NOTE: Default bus assignment. Inserting cards with PCI bridges may alter the actual bus assignment number.
**NOTE: Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).
NOTE: For more information regarding PCI-X, please see the following URL:
http://h18004.www1.hp.com/products/servers/technology/pci-x-qa.html
NOTE: All slots can accept universal keyed PCI cards.

Storage Controllers (per server)	Smart Array 6i Controller (Ultra320) (integrated on system board) NOTE: For complete list of devices supported the Smart array 6i Controller see the following: http://h18000.www1.hp.com/products/quickspecs/12030_na/12030_na.HTML

Standard Features (HP ProLiant DL380 G4 server)

Storage (per server)	Optical Drive	24x IDE CD-ROM Drive (Universal Media Bay)	
	Hard Drives	None	
Maximum Internal Storage	Hot Plug SCSI	1.80 TB	6 x 300 GB Ultra320 1"
Interfaces (per server)	Serial	1	
	Pointing Device (Mouse)	1	
	Graphics	1	
	Keyboard	1	
	External SCSI	1	
	Network RJ-45	3 (1 for iLO)	
	USB	3 (1 front, 2 back) NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html	
Graphics (per server)	Integrated ATI Rage XL Video Controller with 8-MB SDRAM Video Memory		
Form Factor (per server)	2U per server		
Industry Standard Compliance	ACPI 1.0b Compliant PCI-X and PCI 2.2 Compliant WOL Support Microsoft® Logo certifications USB version 1.1		
Security	Power-on password Keyboard password Diskette drive control Diskette boot control QuickLock, Network Server Mode Serial interface control Administrator's password Disk configuration lock		
Server Power Cords	Four (4) total Lowline power cords ship standard (per cluster)		
Power Supply (per server)	575 Watt, CE Mark Compliant Optional Hot Plug Redundant Power Supply Capability		

Standard Features (HP ProLiant DL380 G4 server)

UPS and PDU Power Cord Matrix	Please see the UPS and PDU cable matrix that lists cable descriptions, requirements, and specifications for UPS and PDU units: ftp://ftp.compaq.com/pub/products/servers/ProLiantstorage/power-protection/powercordmatrix.pdf.
System Fans (per server)	Each server contains 8 hot plug fans standard NOTE: This applies to only cluster sku 381367-xx1 and 381369-xx1. Each server contains 5 hot plug fans standard NOTE: This applies to only cluster sku 346899-xx1 and 370671-xx1.
Required Cabling	For required cabling information, refer to the HP Web site at: http://h18000.www1.hp.com/products/servers/ProLiantDL380/.
Factory Express Portfolio for Servers and Storage	HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSA1000, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services for your specific server model please contact your sales representative or go to http://www.hp.com/go/factory-express.
Custom Builder	Please see the Enterprise Configurator for configuration assistance at: http://www.hp.com/products/configurator.
Rack Airflow Requirements	Rack 10000 series Cabinets The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors. CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: o Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). o Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm). CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage. NOTE: For additional information, refer to the Setup and Installation Guide or the Documentation CD provided with the server, or to the server documentation located in the Support section at the following URL: http://h18000.www1.hp.com/products/servers/ProLiantdl760/index.html.

Rack Kit (Servers)	Tool-Free support for racks with square mounting holes (including Compaq/HP 7000, 9000, 10000 and H9 series), with an adjustment range of 24" - 36". NOTE: The Modular Smart Array 500 tool-less rack rail included in the Packaged Cluster accommodates most round or square hole rack standard.

Standard Features (Modular Smart Array 500 G2)

Storage Controller	Modular Smart Array 500 G2 Controller, redundant controller capable	
Storage	**Drive bays**	14 1" Hot pluggable
	Hard Drives	None
	Maximum Internal Storage	4.20 TB (14 x 300 GB Ultra320 1")
	SCSI Hard Drive	Pre-failure warranty
Storage Standard Contents	4U Modular Smart Array 500 G2 Modular Smart Array 500 G2 controller with 256 MB cache 2-port SCSI I/O module Redundant hot pluggable power supply/fans Modular Smart Array 500 rack mounting kit Power cables, 2 VHDCI SCSI cables (2) 6' each Ethernet Crossover cable for clustering	
Storage Controller	Modular Smart Array 500 G2 Controller U320 SCSI technology, redundant controller capable 4 SCSI Channels (2 Host; 2 INTL)	
Host Bus Adapters	Integrated Ultra320 Smart Array 6i Plus Controller on the servers Smart Array 642 Controller (optional)	
Cache Memory	256 MB Read/Write Cache	Up to 512 MB Read/Write Cache (optional)
	ECC protection, battery backed, removable	NOTE: Optional storage memory allows the following configurations: 1 X 256 or 2 X 256 MB.
	NOTE: When redundant controllers are installed, the cache configurations in both controllers must be identical.	
Cache Batteries	Up to three days of redundant battery life, removed for easy replacement	
Upgradeable Firmware	2 MB flashable ROM	
Power Supply	600 Watt (Dual) Power Supply, CE Mark Compliant Fans integrated into each power supply, Redundant Functionality (Standard)	
Disk Drive and Enclosure Protocol Support	Ultra320, Ultra3 and Ultra 2 SCSI 1-inch Universal drives	

Standard Features (Modular Smart Array 500 G2)

DtS (DAS to SAN) Technology	The Smart Array architecture provides a quick and easy way to migrate from the Modular Smart Array 500 G2 to the Modular Smart Array 1000 (MSA1000) for additional scalability. In order to convert the Modular Smart Array 500 G2 to a SAN, simply remove the Modular Smart Array Controller(s) and replace them with StorageWorks MSA1000 Controller(s) and add FC I/O board or FC Switch (please refer to MSA 1000 QuickSpecs for additional SAN requirements information). This is referred to as DtS technology (DAS-to-SAN technology). In addition to convertibility to the SAN, the Modular Smart Array 500 G2 allows the seamless migration of stored data in ProLiant servers protected by Smart Array PCI controllers to a Modular Smart Array 500 system. Data that is currently stored on 1" Universal disk drives using HP Smart Array controllers, as well as data on an RA4100 can easily be migrated to the Modular Smart Array 500 G2. Simply remove the drives from the older systems and insert them into the Modular Smart Array 500 G2. Existing data and configuration will remain intact. In addition, the RAID set and data will be preserved allowing migration to be completed in minutes, not hours.
Form Factor	Rack 4U
Connector Type	Ultra320 SCSI
Ports	2 VHDCI; Ultra320 SCSI
Bandwidth	320 MB/s
Protocols Supported	Ultra320 SCSI (320 MB/s per channel)
User Interface	Controller display with Status Indicators (2) and Push Buttons (4) Status indicators on front of controller (16)
SCSI Ports	2 external VHDCI connectors standard. Optional 4-port Shared Storage Module with 4 VHDCI connectors and multi-path software included.
Logical Drives	Up to 32 logical drives
RAID Support	Raid ADG (Advanced Data Guarding) Raid 5 (Distributed Data Guarding) Raid 1+0 (Striping and Mirroring) Raid 1 (Mirroring) Raid 0 (Striping)

Models

DL380 G4 Packaged Cluster 3.6 GHz with MSA500 G2 (base model) 381367-001	Processor(s)	(1) Intel Xeon Processor 3.6 GHz standard (up to 2 supported)
	Cache Memory	2MB level 2 ECC cache
	Memory	1 GB (Standard per server) to 12 GB (Maximum) of 2 way interleaved capable PC3200 DDR SDRAM running at 400MHz, with Advanced ECC capabilities
	Network Controller	NC7782 Dual Port PCI-X 1000T Gigabit Server Adapter (embedded)
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.80 TB max (with optional hard drives)
	Optical Drive	24x IDE CD-ROM Drive
	Modular Smart Array 500 G2	1 Modular Smart Array 500 G2 with 14 1" drive bays. Includes one Smart Array Storage Controller, redundant optional
	Form Factor	8U configuration fixture
DL380 G4 Packaged Cluster 3.4 GHz with MSA500 G2 (base model) 346899-001	Processor(s)	(1) Intel Xeon Processor 3.4 GHz standard (up to 2 supported)
	Cache Memory	1MB level 2 ECC cache
	Memory	1 GB (Standard per server) to 12 GB (Maximum) of 2 way interleaved capable PC3200 DDR SDRAM running at 400MHz, with Advanced ECC capabilities
	Network Controller	NC7782 Dual Port PCI-X 1000T Gigabit Server Adapter (embedded)
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Internal Storage	1.80 TB max (with optional hard drives)
	Optical Drive	24x IDE CD-ROM Drive
	Modular Smart Array 500 G2	1 Modular Smart Array 500 G2 with 14 1" drive bays. Includes one Smart Array Storage Controller, redundant optional
	Form Factor	8U configuration fixture
DL380 G4 Packaged Cluster 3.6 GHz with MSA500 G2 - Racked model 381369-001	Processor(s)	(1) Intel Xeon Processor 3.6 GHz standard (up to 2 supported)
	Cache Memory	2MB level 2 ECC cache
	Memory	1 GB (Standard per server) to 12 GB (Maximum) of 2 way interleaved capable PC3200 DDR SDRAM running at 400MHz, with Advanced ECC capabilities
	Network Controller	NC7782 Dual Port PCI-X 1000T Gigabit Server Adapter (embedded)
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Diskette Drive	None ship standard
	Optical Drive	24x IDE CD-ROM Drive (MultiBay)
	Internal Storage	1.80 TB max (with optional hard drives)
	Modular Smart Array 500	1 Modular Smart Array 500 G2 with 14 1" drive bays. Includes one Smart Array Storage Controller, redundant optional
	Form Factor	Rack (14U)

Models

DL380 G4 Packaged Cluster 3.4 GHz with MSA500 G2 - Racked model 370671-001	Processor(s)	(1) Intel Xeon Processor 3.4 GHz standard (up to 2 supported)
	Cache Memory	1MB level 2 ECC cache
	Memory	1 GB (Standard per server) to 12 GB (Maximum) of 2 way interleaved capable PC2 3200 DDR2 SDRAM running at 400MHz, with Advanced ECC capabilities
	Network Controller	NC7782 Dual Port PCI-X 1000T Gigabit Server Adapter (embedded)
	Storage Controller	Ultra320 Smart Array 6i Controller (integrated on system board)
	Hard Drives	None ship standard
	Diskette Drive	None ship standard
	Optical Drive	24x IDE CD-ROM Drive (MultiBay)
	Internal Storage	1.80 TB max (with optional hard drives)
	Modular Smart Array 500	1 Modular Smart Array 500 G2 with 14 1" drive bays. Includes one Smart Array Storage Controller, redundant optional
	Form Factor	Rack (14U)

IMPORTANT: The cluster models listed above cannot be customized. If you require additional customization to the cluster, then you must have HP use the Internal Configure-To-Order configurator process to receive a complete factory integrated cluster with options delivered in a single package. The Purchase Order must list each part number individually. This should be communicated in advance with the HP sales or client services at 1-800-888-0292. See steps below for more information.

Step 1: Choose Factory Integration part number (only for 14U racked clusters)

Factory Integration for 14U clusters 342467-888

IMPORTANT: If you are choosing to have the cluster pre-installed into the 14U rack, then you must choose the Factory Integration part number. This part number should be the first line item on the order.

IMPORTANT: The Factory Integration part number is NOT required for the 8U configuration fixture cluster and does NOT need to be listed on the order.

Step 2: Choose an 8U Configuration Fixture or Rack (14U) Shock Pallet

HP 8U Configuration Fixture for SCSI cluster 378026-B21

HP Rack 10614 (14U) - Shock Pallet 292302-B22

NOTE: This ensures the cluster is delivered in a single package with all necessary documentation and cables.

Step 3: Choose two (2) DL380 servers

IMPORTANT: You must choose two (2) identical servers.

HP ProLiant DL380G4 Rack Chassis 371293-405

NOTE: Not all server options are supported in the HP ProLiant DL380 Packaged Cluster. For additional information on supported options, please contact Client Services at 1-800-888-0292.

Please refer to the HP ProLiant DL380 G4 server QuickSpecs for information on CTO server models and options: http://h18004.www1.hp.com/products/servers/proliantdl380/index.html

Step 4: Choose one (1) Modular Smart Array 500 G2 System

HP Modular Smart Array 500 G2 335880-B21

Packaged Content includes:

- Modular Smart Array 500 G2 Chassis
- Modular Smart Array 500 G2 Controller with 256MB cache
- 2-port Ultra 320 SCSI I/O Module
- Redundant Hot Pluggable Power Supply/Blower assemblies
- Two Host Bus Adapters - Smart Array 642 adapters
- Modular Smart Array 500 G2 Rack Mounting Kit
- Modular Smart Array 500 G2 Support Software or SmartStart CD
- Power cables (Qty 2)

Options (DL380 G4 Packaged Cluster with MSA500 G2)

ProLiant DL380 G4 Unique Options (per server)	Hot Plug AC Redundant Power Supply Module (NEMA and IEC cords)	355892-001
	Hot Plug AC Redundant Power Supply Module (IEC cord)	355892-B21
	Floppy Drive Option Kit	364507-B21
	SCSI Configuration Kit	364471-B21
	PCI-X Hot Plug Riser Cage Option Kit	354676-B21
	PCI-Express Riser Cage Option Kit	354675-B21
Processor	Intel Xeon X3.6-2MB/800MHz Processor Option Kit	378751-B21
	Intel Xeon X3.4-1MB/800MHz Processor Option Kit	311583-B21
Memory (SDRAM DIMMs)	1 GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB)	343055-B21
	2 GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB)	343056-B21
	4 GB of Single-Ranked PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 2048 MB)	343057-B21
	4 GB of 2-Rank Advanced ECC PC3200 DDR2-400 SDRAM DIMM Memory Kit (2 x 2048 MB)	375004-B21
Storage Rail Kit (Round Holes)	Round hole rack cabinet rail kit NOTE: Supports for racks with round mounting holes (including HP rack systems/E and HP systems), with an adjustment range of 24"- 36". NOTE: The standard storage rails already support most square and round hole racks.	293052-B21
ProLiant Essentials Value Pack Software	**ProLiant Essentials Integrated Lights-Out Advanced Pack**	
	ProLiant Essentials Integrated Lights-Out Advanced Pack, 1 server Featuring: sophisticated virtual administration features for ultimate control of servers in the data centers and remote sites. NOTE: For additional ProLiant Integrated Light-Out Advanced Pack License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11052_na/11052_na.HTML	263825-B21
	ProLiant Essentials Intelligent Networking Pack	
	ProLiant Essentials Intelligent Networking Pack - Windows Edition, Single Server License NOTE: For use with a single server. Contains one license with a unique license activation key and documentation. NOTE: For additional ProLiant Intelligent Networking Pack - Windows License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12062_na/12062_na.HTML	372906-B21
	ProLiant Essentials Intelligent Networking Pack - Linux Edition, Single Server License NOTE: For additional ProLiant Intelligent Networking Pack - Linux License Kits please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12327_na/12327_na.HTML	397004-B21
	ProLiant Essentials Performance Management Pack	

Options (DL380 G4 Packaged Cluster with MSA500 G2)

ProLiant Essentials Performance Management Pack, Single-Server License 306696-B21
NOTE: For use with a single server. Contains one license with a unique license activation key, HP Management CD and documentation.
NOTE: The most recent version of the software can always be downloaded at http://www.hp.com/products/pmp.
NOTE: For additional ProLiant Performance Management Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11925_na/11925_na.HTML

ProLiant Essentials Rapid Deployment Pack Windows Edition and Linux Edition Release

Rapid Deployment Pack, Single-Server License 267196-B21
NOTE: This license allows 1 server to be deployed and managed via RDP.
NOTE: For additional ProLiant Essentials Rapid Deployment Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11053_na/11053_na.HTML
http://h18000.www1.hp.com/products/quickspecs/11713_na/11713_na.HTML

ProLiant Essentials Workload Management Pack

ProLiant Essentials Workload Management Pack, Single Server License 303284-B21
NOTE: For additional ProLiant Workload Management Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/11452_na/11452_na.HTML

ProLiant Essentials Virtual Machine Management Pack

ProLiant Essentials Virtual Machine Management Pack, Single-Server License 372214-B21
NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.
NOTE: For additional ProLiant Virtual Machine Management Pack License Kits please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12110_na/12110_na.HTML

ProLiant Essentials Vulnerability and Patch Management Pack

ProLiant Essentials Vulnerability and Patch Management Pack, Single-Server License 371645-B21
NOTE: For use with a single server. Contains one license with a unique license activation key and documentation.
NOTE: For additional ProLiant Vulnerability and Patch Management Pack License Kits, please see the QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/12111_na/12111_na.HTML
NOTE: Flexible and volume quantity license kits are available for ProLiant Essentials Value Packs. Refer to http://www.hp.com/servers/proliantessentials or the various ProLiant Essentials Value Pack product QuickSpecs for more information.
NOTE: For more information regarding ProLiant Essentials Software, please see the following URL: http://www.hp.com/servers/proliantessentials.

Options

Communications	HP NC150T PCI 4-port Gigabit 1000T Combo Switch Adapter	367132-B21
	HP NC310F PCI-X 1000SX Gigabit Server Adapter	368169-B21
	HP NC320T PCI Express 1000T Gigabit Server Adapter	367047-B21
	HP NC1020 PCI 1000T Gigabit Server Adapter	353377-B21
	HP NC7170 PCI-X Dual Port 1000T Gigabit Server Adapter	313881-B21
	HP NC7771 PCI-X 1000T Gigabit Server Adapter	290563-B21
	NOTE: Any network adapter (NIC), except the NC1020, on the option list can be used for redundancy with the embedded NC7782 NIC. When teaming with other NICs or with the embedded NIC, the lack of Jumbo Frames and LSO features on the NC1020 will cause high end NICs to have those features disabled. (e.g. incompatibility issues with the other option NICs for that platform).	
Redundant Options	Hot Plug AC Redundant Power Supply Module (NEMA cord)	355892-001
	Hot Plug AC Redundant Power Supply Module (IEC cord)	355892-B21
Optical Drives	Slimline DVD-ROM Drive (8X/24X) Option Kit (Servers)	264007-B21
	Slimline CD-RW/DVD-ROM Combo Drive Option Kit	331903-B21
	HP DVD+R/RW 8X Slim	383975-B21
Diskette Drives	Floppy Drive Option Kit	364507-B21
Hard Drives	*Ultra320 SCSI – Universal Hot Plug*	
	300-GB 10,000 rpm U320 Universal Hard Drive, 1"	350964-B22
	146.8-GB 10,000 rpm U320 Universal Hard Drive, 1"	286716-B22
	72.8-GB 10,000 rpm U320 Universal Hard Drive, 1"	286714-B22
	146.8-GB 15,000 rpm Ultra320 Universal Hard Drive, 1"	347708-B22
	72.8-GB 15,000 rpm U320 Universal Hard Drive, 1"	286778-B22
	36.4-GB 15,000 rpm U320 Universal Hard Drive, 1"	286776-B22
	NOTE: All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.	
	NOTE: Please see the Hard Drive QuickSpecs for Technical Specifications such as capacity, height, width, interface, transfer rate, seek time, physical configuration, and operating temperature: U320 Hard Drive QS: http://h18000.www1.hp.com/products/quickspecs/11531_na/11531_na.HTML	
Redundant Storage Controller	Modular Smart Array 500 G2 Redundant Controller Option Kit	335881-B21

Options

Modular Smart Array 500 G2 High Availability Kit	Modular Smart Array 500 G2 High Availability Kit NOTE: Includes MSA500 G2 controller, MSA500 G2 4-port IO Module, Smart Array Multipath Software, two Smart Array 642 Adapters and two 6 foot SCSI Cables	360229-B21
4-Port I/O module	MSA500 G2 4-Port I/O Module with Smart Array Multipath Software and two 6 foot SCSI Cables	335882-B21
Storage Controllers	Smart Array 6i 128MB Battery Backed Write Cache Enabler Option Kit	346914-B21
	Smart Array 642 Controller	291967-B21
	128MB Battery-Backed Cache Enabler NOTE: This 128MB BBWC supports the Smart Array 641 Controller and Smart Array 642 Controller. NOTE: Please see the following Controller or SCSI Adapter QuickSpecs for Technical Specifications such as PCI Bus, PCI Peak Data Transfer Rate, SCSI Protocols supported, SCSI Peak Data Transfer Rate, Channels, SCSI Ports, Drives supported, Cache, RAID support, and additional information: http://h18000.www1.hp.com/products/quickspecs/11063_na/11063_na.HTML (Smart Array 6i Plus) http://h18000.www1.hp.com/products/quickspecs/12069_na/12069_na.HTML (Smart Array 642)	351580-B21
Management Options	Remote Insight Lights-Out Edition II	227251-001
Tape Autoloaders	*HP StorageWorks 1/8 Tape Autoloader*	
	1/8 Ultrium 232 Tape Autoloader, Tabletop	AF202A
	1/8 Ultrium 460 Tape Autoloader, Tabletop	AA927A
	1/8 Ultrium 960 Tape Autoloader, Tabletop	AF204A
	1/8 Tape Autoloader Rackmount Kit NOTE: Required to install the 1/8 tape autoloader in a standard 19-inch rack. NOTE: Please reference the 1/8 Tape Autoloader QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs	C9268R
	HP StorageWorks SSL1016 Tape Autoloader	
	SSL1016 Ultrium 460 Tape Autoloader	330821-B21
	SSL1016 SDLT 320 Tape Autoloader NOTE: Please reference the SSL1016 Tape Autoloader QuickSpecs at http://www.hp.com/go/automation for additional information needed to create a complete solution; reference current compatibility information at http://www.hp.com/go/ebs.	330816-B21

Options

Cluster Options	HP Serviceguard for Linux ProLiant Cluster A.11.15 for SUSE SLES 8 (2 node license cluster kit)	305199-B24
	HP Serviceguard for Linux ProLiant Cluster A.11.16 for SUSE SLES 9 and Red Hat EL & 4 (2 node license cluster kit)	305199-B26
	HP Serviceguard for Linux License A.11.15 for SUSE SLES 8 (single license version)	307754-B24
	HP Serviceguard for Linux A.11.16 for SUSE SLES9 and Red Hat EL 3 & 4 (single license version)	307754-B26
	NOTE: For additional information regarding the HP Serviceguard for Linux License, please see the following QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/11518_na/11518_na.html	
HP Power Distribution Unit with Power Monitoring	HP Power Distribution Unit with Power Monitoring Model S2324 - dual input, 3 phase, 24A	370959-D71
	HP Power Distribution Unit with Power Monitoring Model S1324 - single input, 3 phase, 24A	370960-D71
	HP Power Distribution Unit with Power Monitoring Model S2140 - dual input, 1 phase, 40A	370961-D71
	HP Power Distribution Unit with Power Monitoring Model S1140 - single input, 1 phase, 40A	370962-D71
Uninterruptible Power Systems – Rack Mountable	HP UPS R5500 XR, (5000VA, 4500 Watt), High Voltage	326529-D71
	HP UPS R1500 XR (1440VA, 1340 Watt), Low Voltage	204404-001
	HP UPS R3000 XR (2880VA, 2700 Watt), Low Voltage	192186-001
	HP UPS R3000 XR (3000VA, 2700 Watt), High Voltage	192186-002
	UPS R12000 XR N+x (200-240V) (hardwired) NOTE: The UPS R12000 XR has a hardwired input and output; requires a 100A circuit.	207552-B22
Modular PDUs 1U/0U (Up to 32 outlets) NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 and 9000 series racks).	HP Modular Power Distribution Units (mPDU), Low Volt Model, 24A (100-127 VAC) NOTE: This mPDU (252663-D71) may also be used to connect the low volt model of the UPS R3000 XR.	252663-D71
	HP Modular Power Distribution Units (mPDU), High Volt Model, 24A (200-240 VAC)	252663-D72
	HP Modular Power Distribution Units (mPDU), High Volt Model, 40A (200-240 VAC) NOTE: This mPDU (252663-B21), 40A model has a hardwired input.	252663-B21
	HP Modular Power Distribution Units (mPDU), High Volt Model, 16A (200-240 VAC) NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements. This model may also be used with the high volt UPSs R3000 XR and R6000 For North America, need to order cable PN 340653-001.	252663-B24
	HP Modular Power Distribution Unit (mPDU), High Volt Model, 40A, Attached Cord NOTE: Please see the following Modular Power Distribution Unit (Zero-U/1U Modular PDUs) QuickSpecs for additional options including shorter jumper cables and country specific power cords: http://www5.compaq.com/products/quickspecs/11041_na/11041_na.HTML	252663-D73

Options

USB Options	HP USB 2-Button Optical Scroll Mouse (Carbonite/Silver)	DC172B
	USB 1.44-MB External Diskette Drive (Carbonite)	DC141B
	256MB HP Drive Key II (USB 2.0)	PH657A

HP Racks - for standard cluster with 8U configuration fixture (non-rack model)

HP Rack 5000 Series (Graphite Metallic)	HP 5642 Rack-Unassembled	358254-B21

Rack Options for Rack 5000 Series	Stabilizer Kit for 5642 Rack (Graphite Carbon) NOTE: The stabilizing kit is used to prevent rack from tipping over.	374493-B21
	Baying Kit for 5642 Rack (Graphite Carbon) NOTE: The baying kit is used to join two or more HP 5642 racks.	374499-B21

HP Rack 10000 Series (Graphite Metallic)	10642 (42U) Infrastructure Rack (Low Voltage)	379006-001
	10642 (42U) Infrastructure Rack (High Voltage)	379005-001
	HP Rack 10842 (42U, 800mm wide) - Pallet	257415-B21
	HP Rack 10842 (42U, 800mm wide) – Shock Pallet	257415-B22
	HP Rack 10647 (47U) – Pallet	245160-B21
	HP Rack 10647 (47U) – Crated	245160-B23
	HP Rack 10642 (42U) – Pallet	245161-B21
	HP Rack 10642 (42U) – Shock Pallet	245161-B22
	HP Rack 10642 (42U) – Crated	245161-B23
	HP Rack 10636 (36U) – Pallet	245162-B21
	HP Rack 10636 (36U) – Shock Pallet	245162-B22
	HP Rack 10636 (36U) – Crated	245162-B23
	HP Rack 10622 (22U) – Pallet	245163-B21
	HP Rack 10622 (22U) – Shock Pallet	245163-B22
	HP Rack 10622 (22U) – Crated	245163-B23
	HP Rack 10614 (14U) – Shock Pallet	292302-B22
	NOTE: -B21 (pallet) used to ship empty racks shipped on a truck -B22 (shock pallet) used to ship racks with equipment installed (by custom systems, VARs and Channels) -B23 (crated) used for air shipments of empty racks	
	NOTE: It is mandatory to use a shock pallet in order to ship racks with equipment installed. Not all Compaq equipment is qualified to be shipped in the Rack 10000 series	
	NOTE: Please see the Rack 10000 QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/10995_na/10995_na.HTML	
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/racks/index.html.	

Options

Rack Options for Rack 10000 Series	HP Rack Light Kit (Neon)	361589-B21
	HP Rack Plinth Kit (Carbon)	251960-B21
	42U Side Panel - Graphite Metallic	246099-B21
	36U Side Panel - Graphite Metallic	246102-B21
	47U Side Panel - Graphite Metallic	255486-B21
	TFT7210R Rack Mounted 17" Monitor	348373-B21
	NOTE: For a complete list of Monitors please view the following URL: http://h18004.www1.hp.com/products/monitors/.	
	TFT5600 Rack Keyboard Monitor	221546-001
	NOTE: For a complete list of Monitors please view the following URL: http://h18004.www1.hp.com/products/monitors/.	
	1U Rack Keyboard & Drawer (Carbon)	257054-001
	NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://h18000.www1.hp.com/products/servers/proliantstorage/rack-options/index.html.	
HP KVM Switch Options	IP Console Switch Box (KVM/IP), 3 x 1 x 16	262586-B21
	IP Console Switch Box (KVM/IP), 1 x 1 x 16	262585-B21
	Server Console Switch (KVM), 0 x 1 x 8 port	336044-B21
	Server Console Switch (KVM), 0 x 2 x 16 port	336045-B21
	PS/2 Interface Adapter, 1 pack	262588-B21
	PS/2 Interface Adapter, 8 pack	262587-B21
	USB Interface Adapter, 1 pack	336047-B21
	Serial Interface adapter - 1 Pack with power supply	373035-B21
	NOTE: Cat5e cables are required to connect Interface Adapters to Console Switches. Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	HP 1x 4 USB/PS2 KVM Switch, TT	371301-D71
	HP 1x 4 USB/PS2 KVM Switch, RM	371302-B21
	HP PS2 KVM Cable with audio, 6', 2-pack	371730-B21
	HP USB KVM Cable with audio, 6', 2-pack	371729-B21
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	
HP Serial Console Server Options	HP 16 Port Serial Console Server	AF101A
	HP 48 Port Serial Console Server	AF102A
	Serial Adapter, RJ45-DB9 DCE Female, 1 Pack	AF103A
	Serial Adapter, RJ45-DB9 DCE Female, 8 Pack	AF110A
	NOTE: Cat5e cables are required to connect Serial Adapters to Serial Console Servers. Additional Serial Adapters and Cat5e cables can be found at the following URL: http://www.hp.com/go/kvm.	
	NOTE: For additional information regarding KVM switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	

Options

Rack Options for Third Party Cabinet Racks	Input Device Telco Rails NOTE: Input Device Telco Rails (287138-B21) are for use ONLY with the TFT5110R, TFT5600RKM and integrated keyboard/drawer, which is used in mounting into third party racks.	287138-B21
	Round hole rack cabinet rail kit NOTE: Support for racks with round mounting holes (include HP Rack System /E and HP Systems) with an adjustment range of 24"- 36".	293052-B21

Service and Support Offerings (HP Care Pack Services)

NOTE: The DL380 Packaged Cluster Care Pack services cover the two DL380 servers and the external storage component.

Hardware Services On-site Service	
4-Hour On-site Service, 13-Hour x 5-Day Coverage, 3 Years, Electronic	U4560E
4-Hour On-site Service, 24-Hour x 7-Day Coverage, 3 Years (U.S. Part Number), Electronic	U4561E
24-Hour x 7-Day, 6-hour Call To Repair, 3 Years, Electronic	U4562E
Installation & Start-up Services	
Hardware Installation, Electronic	U4570E
Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays, Electronic	U2870E
W2K AS Cluster Configuration HP Care Pack	
Install & Configure MS Windows 2000 Advanced Sever Cluster software on a cluster, Electronic	U5701E
Support Plus	
Onsite HW support, 8am-9pm, M-F, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 8am-9pm, M-F 2hr response time excl. HP holidays, Electronic	U4571E
Support Plus 24	
Onsite HW support 24x7, 4hr response and Microsoft O/S SW Tech support offsite, onsite at HP's discretion, 24x7 2hr response time incl. HP holidays, Electronic	U4572E

NOTE: For more information, customer/resellers can contact http://www.hp.com/services/carepack.

Memory

HP ProLiant DL380 G4 server

Standard Memory

1024 MB PC2 3200 MHz Registered DDR2 SDRAM DIMM installed (2 x 512-MB SDRAM)

Standard Memory Plus Optional Memory

Up to 5,120 MB memory is available with the optional installation of PC2 3200 MHz Registered DDR2 SDRAM DIMM memory kits.

Standard Memory Replaced with Optional Memory

Up to 12,288 MB memory is available with the removal of the standard 1-GB of memory and the optional installation of PC2 3200 MHz Registered DDR2 SDRAM DIMM memory option kit.

NOTE: Chart does not represent all possible configurations.

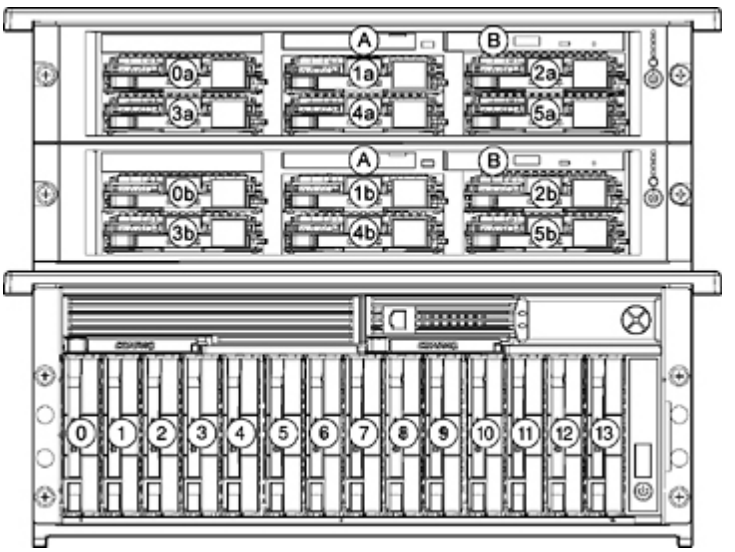
Memory		Slot					
		1	2	3	4	5	6
Standard	1024 MB	512 MB	512 MB	Empty	Empty	Empty	Empty
Optional	5,120 MB	512 MB	512 MB	1 GB	1 GB	1 GB	1 GB
Maximum	12 GB	2 GB	2 GB	2 GB	2 GB	2 GB	2 GB

NOTE: Slots 3 and 6 can be configured as online spare memory through RBSU.

Following are memory options available from HP:

- 1 GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 512 MB) 343055-B21
- 2 GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 1024 MB) 343056-B21
- 4 GB of Advanced PC2 PC3200 DDR2 SDRAM DIMM Memory Kit (2 x 2048 MB) 343057-B21

Storage



0a - 5a	Six 1" Ultra320 SCSI hot plug hard drive bays
0b-5b	Six 1" Ultra320 SCSI hot plug hard drive bays
0-13	Fourteen 1" Ultra320 SCSI hot plug hard drive bays
A	Optional 1.44-MB Diskette Drive
B	24x IDE CD-ROM (Slimline) NOTE: Only a CD-ROM drive is qualified for use in the MultiBay slot.
0a & 0b	Convertible 1.6" drive bay - supports either (1) 1" Hot Plug Drive or (1) 1.6" AIT or 20/40/100-GB DAT Hot Plug Tape Drive

Drive Support

	Quantity Supported	Position Supported	Controller
1.44-MB Diskette Drive	Up to 1	a	Integrated (Optional)
IDE CD-ROM Drive	Up to 1	b	Integrated IDE

Hard Drives

Ultra320 Hot Pluggable Drives

	Quantity Supported	Position Supported	Controller
1-inch			
300-GB 10,000 rpm 146.8-GB 10,000 rpm 72.8-GB 10,000 rpm 146.8-GB 15,000 rpm 72.8-GB 15,000 rpm 36.4-GB 15,000 rpm	Up to 26	0a-5a, 0b-5b, 0-13	Smart Array 6i Controller (integrated on system board) 64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter 64-Bit/66-MHz Dual Channel Wide Ultra3 SCSI Adapter, Alternate OS

NOTE: All U320 Universal Hard Drives are backward compatible to U2 or U3 speeds. U320 drives require an optional U320 Smart Array Controller or U320 SCSI HBA to support U320 transfer rates.

Maximum Storage Capacity – (Per HP ProLiant DL380 G4 Server)

Internal	1.80 TB (6 x 300 GB Ultra320 1")

Maximum Shared Storage Capacity (Modular Smart Array 500 G2)

Internal	4.20 TB (14 x 300 GB Ultra320 1")

Storage

Tape Drives and Tape Autoloaders

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Drives listed below, please see the following:
http://h18000.www1.hp.com/products/quickspecs/North_America/10233.html

NOTE: For an up-to-date listing of the latest O/S Support details for each of the Tape Autoloaders listed below, please see the following:
http://h18000.www1.hp.com/products/quickspecs/North_America/10809.html

NOTE: For complete listing of tape drive offerings see
http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html

For recommended tape drive offerings for this ProLiant server see the following:

	Quantity Supported	Position Supported	Controller
HP StorageWorks Autoloaders, External DAT 72x6 Tape Autoloader 1/8 Tape Autoloader SSL1016 Tape Autoloader	1	External	64-Bit/133MHz Dual Channel Ultra320 SCSI Adapter

Power Specifications

Part Number	194989-001
Spare Kit	19982-B21
Operational Input Voltage Range (V rms)	90 to 264
Frequency Range (Nominal) (Hz)	47 to 63 (50/60)

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	400	400	400	400	400	400
Nominal Input Current (A rms)	5.8	5.0	2.7	2.5	2.4	2.3
Max Rated Input Wattage Rating (Watts)	571	563	548	541	541	541
Max. Rated VA (Volt-Amp)	583	575	559	552	552	552
Efficiency (%)	70	71	73	74	74	74
Power Factor	0.98	0.98	0.98	0.98	0.98	0.98
Leakage Current (mA)	0.31	0.36	0.65	0.69	0.72	0.75
Maximum Inrush Current (A peak)	50	50	50	50	50	50
Maximum Inrush Current duration	20	20	20	20	20	20

NOTES:
* To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls.

To drill down to calculators:
- Click on: "ProLiant Servers"
- Click on the Server of interest. Example: DL380 G4 Packaged Cluster
- Click on: "Power Calculator" link. (You may need to scroll down to see it)

Power Cords (13 Cord Sets)	
	Power Cord Part Number
	163719-002

System Unit - DL380 G4 Server	Dimensions (HxWxD)	3.38 x 17.5 x 25.75 in (8.59 x 44.45 x 65.40 cm)	
	Weight	Maximum	60 lb (27.22 kg)
		No drives	47.18 lb (20.41 kg)
	Input Requirements (per power supply)	Range Line Voltage	100-132 VAC to 200-240 VAC
		Rated Input Current	7.5A (100VAC) / 3.8A (200VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	735 W
	BTU Rating	2,508 BTU/HR	
	Power Specifications	To review typical system power ratings use the Active Answers Power Calculator which is available via the online tool located at URL: http://h30099.www3.hp.com/configurator/calc/Power%20Calculator%20Catalog.xls To drill down to calculators: - Click on: "ProLiant Servers" - Click on the Server of interest. Example: DL380 G4 Packaged Cluster - Click on: "Power Calculator" link. (You may need to scroll down to see it)	
	SCSI Connectors	One external VHDCI connector	
	Power Supply Output Power (per power supply)	Rated Steady-State Power	575W
		Maximum Peak Power	575W
	Temperature Range	Operating	50° to 95° F (10° to 35° C)
		Shipping	-22° to 122° F (-30° to 50° C)
	Relative Humidity (non-condensing)	Operating	10% to 90%
		Shipping	5% to 95%
	Maximum Wet Bulb Temperature	82.4° F (28° C)	
	Acoustic Noise	Idle (Fixed Disk Drives Spinning)	
		L WAd (BELS)	7.4
		L pAm (dBA)	58
		Operating (Random Seeks to Fixed Disks)	
		L WAd (BELS)	7.4
		L pAm (dBA)	58

Technical Specifications

Modular Smart Array 500 G2	Dimension	4.5 x 1.375 x 9.5 in (11.4 x 3.5 x 24.1 cm)	
	Weight	Maximum (Net)	50 lb (22.5 kg)
	Input Requirements (per power supply)	Rated Input Voltage	100 to 240 VAC
		Rated Input Frequency	50 to 60 Hz
		Rated Input Current	2.3 A at 120 VAC typical, 6A Maximum
		Input Power (Max)	549 W*
		Heat Dissipation (max)	1876 Btu/hr*
		*Input Power and Heat Dissipation specifications are maximum values and apply to worst-case conditions at full rated power supply load. The power/heat dissipation for your installation will vary depending on the equipment configuration.	
	Temperature Range	Operating	50° to 95° F (10° to 35° C)
		Shipping	-2° to 122° F (-0° to 50° C) NOTE: Rated 1°C per 1000 feet of elevation to 10000 ft.
	Relative Humidity (non-condensing)	Operating	10% to 90%
		Non-operating	Up to 95%
Packaged Cluster	Dimensions	16 x 21 x 29 in (17.5 x 48.3 x 52.1 cm)	
	Weight	Standard Configuration (No drives dual power supplies)	190 lb (86.18 kg)
Integrated Smart Array 6i Plus Controller	Data Compatible with all Smart Array Controllers	Yes	
	Instant Upgrades to other Smart Array Controllers	Yes	
	Consistent Software Manageability Tools	Yes	
	PCI-X Bus	64-bit up to 133 MHz (integrated on system board)	
	PCI-X Peak Data Transfer Rate	800 MB/s	
	SCSI Protocols Supported	Ultra320, Ultra3, Ultra2	
	SCSI Peak Data Transfer Rate	320 MB/s per channel NOTE: For ProLiant servers having TWO internal drive bays on separate SCSI ports: SCSI Peak Data Transfer Rate is 320 MB/s; 160 MB/s per channel and Channels is 2.	
	Channels	2 NOTE: For ProLiant servers having two internal drive bays on separate SCSI ports: SCSI Peak Data Transfer Rate is 320 MB/s; 160 MB/s per channel and Channels is 2.	
	SCSI Ports (external/internal)	0/2 NOTE: For ProLiant servers having two internal drive bays on separate SCSI ports: SCSI Peak Data Transfer Rate is 320 MB/s; 160 MB/s per channel and Channels is 2.	

	Drives Supported (maximum)	Maximum = total number of drives NOTE: Maximum is the total number of internal drives on each specific ProLiant server.
	Cache	64 MB Read Cache
	Battery-Backed Write Cache	Yes, with installation of Battery-Backed Write Cache Enabler, up to 64MB
	RAID Support	0, 1, 1+0, 5
	Logical Drives (maximum)	Maximum = total number of drives
	Online Configuration	Yes
	Online Capacity Expansion	Yes
	Logical Drive Capacity Extension	Yes
	Online Stripe Size Migration	Yes
	Online RAID Level Migration	Yes
	Online Spare Support	Yes
	Automatic Data Recovery	Yes
	Drive Roaming	Yes
	Redundant Controllers	No
NC7782 Dual Port PCI-X Gigabit NIC (embedded) 10/100/1000 WOL (Wake On LAN)	Network Interface	10Base-T/100Base-TX/1000 BaseTX
	Compatibility	IEEE 802.3/802.3u compliant
	Data Transfer Method	64-bit bus-master PCI-X
	Network Transfer Rate	10Base-T (Half-Duplex) 10 Mb/s
		10Base-T (Full-Duplex) 20 Mb/s
		100Base-TX (Half-Duplex) 100 Mb/s
		100Base-TX (Full-Duplex) 200 Mb/s
		1000Base-TX (Half and Full-Duplex) 2000 Mb/s
	Connector	RJ-45
	Cable Support	10Base-T Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX Category 5 UTP; up to 328 ft (100 m)
		1000Base-TX Category 5 UTP; up to 328 ft (100 m)

Technical Specifications

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